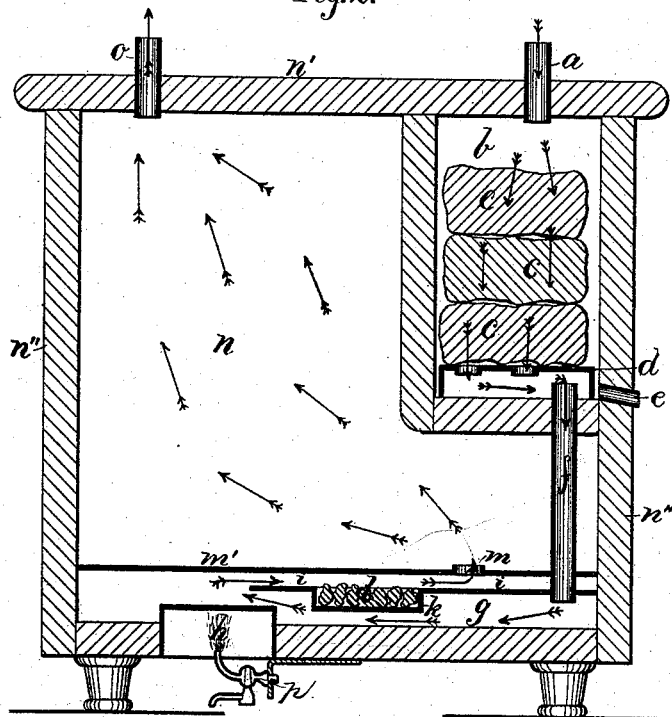
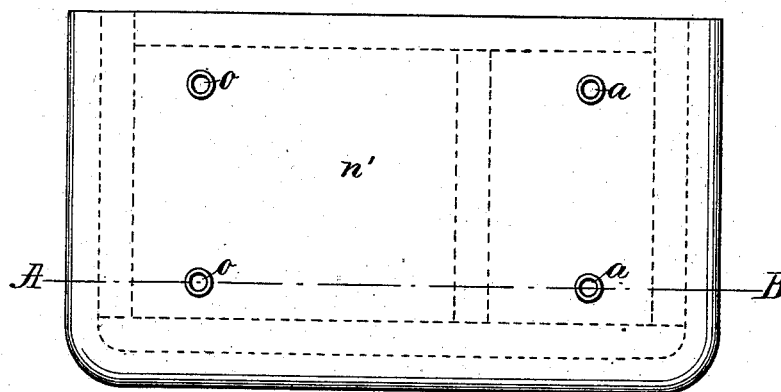


A. J. CHASE.  
Purifying, Circulating, and Rarifying Air.  
No. 215,572.                      Patented May 20, 1879.

*Fig. 2.*



*Fig. 1.*



Witnesses:

*Henry Chadbourne*  
*Lavinia J. Miller*

Inventor:

*Andrew J. Chase*  
by *Alban Andrew*  
his atty.

# UNITED STATES PATENT OFFICE.

ANDREW J. CHASE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN PURIFYING, CIRCULATING, AND RAREFYING AIR.

Specification forming part of Letters Patent No. **215,572**, dated May 20, 1879; application filed May 24, 1878; patented in Canada, April 24, 1878.

### *To all whom it may concern:*

Be it known that I, ANDREW J. CHASE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Methods of Purifying, Circulating, and Rarefying Air, for desiccating and respiratory purposes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to an improved method of purifying, circulating, and rarefying air for desiccating and respiratory purposes; and the apparatus that I employ for the purpose of producing an atmosphere artificially washed, dried, and rarefied is constructed as follows:

Said apparatus consists of a room or cabinet provided with a condensing-chamber, which is to contain ice or other cooling material, said chamber being provided with induction pipe or pipes leading from the outer atmosphere, and an educt-pipe connecting with the space below the false floor of the cabinet. The cabinet has also a pipe connecting with the external air.

The air is allowed to flow automatically into the cooling-chamber, and, coming in contact with the ice or cooling material, it is condensed and deprived of its moisture, as well as washed from all dust and other impurities, which are arrested and removed with the waste-water. The air afterward sinks down through conducting-pipes (on account of its increased specific gravity, due to its condensation and low temperature) into a conduit, where it comes in contact with a heat-radiating surface, by means of which it is highly rarefied, causing it to rise upward with an expansive force, due to its increased temperature.

The circulation of the air, as above described, is caused by and dependent on the height of the descending and ascending air-columns, and is also dependent upon the difference in their respective temperatures.

The air, after being thus dried and purified, may be chemically acted upon by letting it pass over or between chemical ingredients or substances, so as to vaporize, medicate, or further dry it for desiccating purposes, as well as for many purposes in the arts and sciences—

such as, for instance, charging it with medicinal properties to act upon the blood through the agency of the lungs. Its capacity for taking up moisture and thus producing rapid evaporation is also very great. The air now passes upward through suitable inlets into the cabinet or room, and finally passes out through eduction-pipes leading to the outer atmosphere.

When it is desirable to maintain a lower temperature in the room or cabinet than that which exists in the external atmosphere, a sufficient amount of heat may be applied in connection with the eduction-pipes, so as to force the air out from said room or cabinet.

The object sought to be accomplished in this invention is to produce, in a room or cabinet, an artificially dried and purified atmosphere of any desirable temperature independent of external circumstances, place, or conditions.

The accompanying drawings represent an apparatus for carrying out my invention, in which—

Figure 1 is a plan view; and Fig. 2 is a vertical section through the line A B, shown in Fig. 1.

*a a* are the induction-pipes, leading to the cooling-chamber *b*, containing ice *c*, or suitable cooling material, resting on a perforated bottom or grating, *d*, as shown. *e* is a waste-pipe from the cooling-chamber, as usual. *f* is a tube leading from the cooling-chamber *b* to the lower conduit, *g*. *p* represents a gas-jet for heating the air. *h* is the heat-radiator, (heated by gas, steam, or otherwise,) over which the air passes from the conduit *g* to the conductor *i*. *k* is a receptacle, containing chemical or medicinal matters *l*, for the purpose set forth. *m* is an inlet (more may be provided, if necessary) to the room or cabinet *n*, of which *n'* is the top, and *n'' n''* the sides. *m'* is a false bottom or floor between the interior of the cabinet or room *n* and the conduits *g* and *i*. *o o* are eduction-pipes, leading from the room or cabinet *n* to the external atmosphere.

A patent for the Dominion of Canada has been duly issued to me for this invention, which patent bears date April 24, 1878, No. 8,669.

What I wish to secure by Letters Patent, and claim, is—

The herein-described process for purifying, circulating, and rarefying the air of rooms, &c., which consists in first conducting the air from the outside of the room or apartment over ice, after which it is subjected to the action of heat, is then passed over chemical substances, whereby it is disinfected, and is finally

admitted into the desired room or apartment, after passing through which it is allowed to escape into the outer atmosphere, as and for the purpose specified.

ANDREW J. CHASE.

Witnesses:

ALBAN ANDRÉN,  
HENRY CHADBOURNE.